

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.0 Introduction

This chapter begins by highlighting the quantitative data analysis of the both questionnaires in 4.1, followed by quantitative data analysis of students' texts in 4.2 as well as qualitative data analysis of interview transcripts and instructor's notes in section 4.3. Finally, section 4.4 concludes the whole of Chapter Four.

4.1 Quantitative data analysis of questionnaires

Descriptive statistics of the first and second questionnaires were obtained. Overall, there were 17 items in the first questionnaire (11 items in the first section and 6 items in the second section) and another 7 items in the second questionnaire. However, only 23 out of the total 24 items were analysed quantitatively. This is due to the fact that the last item in the second questionnaire was an open-ended question which had to be analysed qualitatively. However, since none of the students responded to the last item in the second questionnaire, only 23 out of the total 24 items could be analysed (see *Appendix C: Case summary of items in questionnaires*).

4.1.1 The first questionnaire (before the use of e-mail)

(a) Section 1, Items 1 - 11

The aim of this section which comprised 11 items is to gather information with regard to the students' background (see p. 70) which might be useful during data analysis. In Section 1 of the first stage questionnaire, students were asked to choose from the options given. In item 1, although the percentage did not accurately represent the true percentage of distribution of the BTEC HND (Business) student population by gender, it did however indicate that there were more female students in the sample studied, which was representative of the BTEC HND (Business) student population and that of the college student population (see Table 11 below and Figure 11, p. 77).

Table 11 : Distribution of ITD student population according to courses, by gender

Course	Percentage (%)	
	Male	Female
DDC	45.5	54.5
DDE	69.0	31.0
DDG	32.3	64.7
DDW	25.6	74.4
DDZ	54.1	45.9
DLI	22.5	77.5
Pre-Dip	45.2	54.8
BTEC	46.2	53.8
Total student population	40.6	59.4
Legend: DDC = Comp. Sc. (Information Technology) DDE = Electrical Engineering DDG = Management Technology DDW = Management Technology (Accounting) DDZ = Comp. Sc. (Multimedia) DLI = Education (Islamic Studies) PRE = Pre-Diploma BTEC = BTEC HND (Business)		

Source : Admissions & Records Department, ITD (2001)

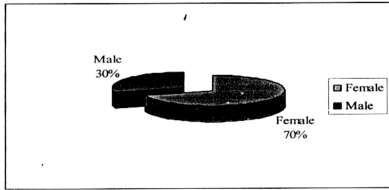


Figure 11 : Distribution of sample, by gender

Meanwhile, in item 2, the majority of the students (7 out of 10 subjects) fell into the age group of 20 – 21 years old and above, while the other three subjects were between the age group of 19 – 20 (1 subject) and 18 – 19 years old (2 subjects) respectively, as shown in Figure 12 below:

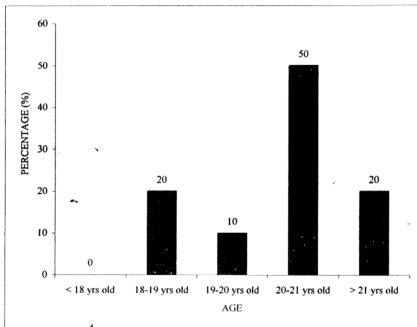


Figure 12 : Distribution of sample, by age group

Data analysis of item no. 3, that is, students' highest level of education, showed that no one went beyond *SPM* level, although in item no. 4, working experience, statistics indicate that 60% (6) of them did have some short working experience of not more than 2 years (see Figure 13 below).

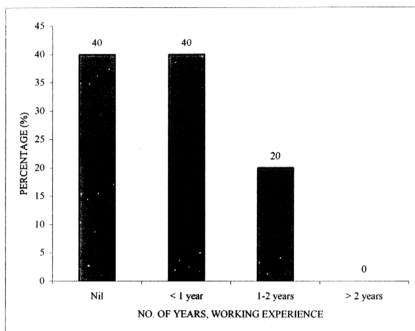


Figure 13: Distribution of sample, by working experience

Because their highest level of education is *SPM*, therefore all students had spent at least 10 - 11 years learning English as a Second Language (ESL). As a matter of fact, at least 60% (6) of them had had post-secondary ESL learning experience (see Figure 14, p. 79). However, only 1 subject did obtain a distinction and 3 subjects obtained a strong credit in English Language at *PMR* level (see Figure 15, p. 79) whilst at *SPM* level, no one scored a

distinction and only 3 subjects scored a strong credit (see Figure 16, p. 80). No students failed English Language at *PMR* or *SPM* level, which is one of the criteria predetermined prior to this study. Nevertheless, the majority of them were average and below average students.

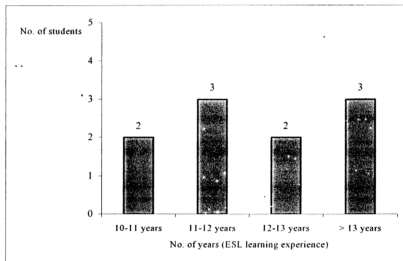


Figure 14 : Distribution of sample, by ESL learning experience

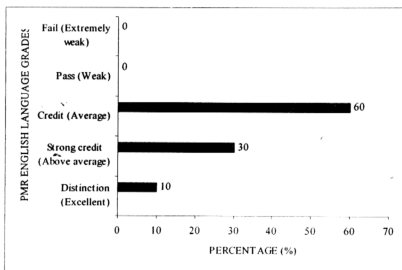


Figure 15:⁴ Distribution of sample, by PMR English Language grade

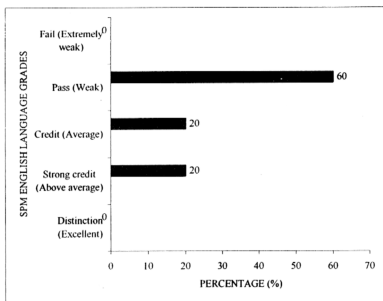


Figure 16 : Distribution of sample, by SPM English Language grade

Although at least 50% (5) of the students did have some kind of post-secondary ESL learning experience (see Figure 14, p. 79), none of the subjects had ever attended any extra English Language proficiency courses. In addition, only 1 subject did have previous experience of tertiary level education at public institutions while 80% (8) of the subjects admitted that they had previously studied at tertiary-level private educational institutions. All of them also admitted that they did have some basic knowledge of using e-mail, which was also one of the criteria that had to be met.

(b) Section 2, Items 1-6

Meanwhile, the second section of the first stage questionnaire consisted of another six items, which were able to be quantitatively analysed because the researcher used 5-point rating of:

- i. Excellent – Good – Average – Poor – Extremely Poor (for items no. 1 – no. 3 which were related to the students’ perceptions on the use of e-mail before it was used in memo-writing)
- ii. Strongly agree – Agree – Not sure – Disagree – Strongly disagree (for items no. 4 – no. 6 which were related to the students’ opinions about their own performance if e-mail was used in memo-writing with regard to the memo format)

Table 12 : Frequency of students’ response to Items 1-6, Section Two of the First Questionnaire

Rating Item	Excellent	Good	Average	Poor	Very Poor
Sec2, Item 1	0	5	3	2	0
Sec2, Item 2	0	5	4	1	0
Sec2, Item 3	0	1	6	3	0
Rating Item	Strongly agree	Agree	Not sure	Disagree	Strongly disagree
Sec2, Item 4	0	0	7	3	0
Sec2, Item 5	0	9	1	0	0
Sec2, Item 6	1	5	3	1	0
Legend: Item 1 =Using e-mail in memo-writing Item 2 =Using the multimedia lab as classroom during memo-writing activities Item 3 =Technical support at the multimedia lab Item 4 =Using e-mail will not have any effect on understanding of the memo format Item 5 =Using electronic memo templates will help gain more marks on format in memo-writing Item 6 =Using e-mail will help memos to have more business-like appearance					

Table 12 above indicates that 50% (5) of the students were positive that the use of e-mail in memo-writing would be good for them, while 30% (3) were not sure about it. Only 20% (2) of the subjects seemed to regard the idea as negative. One of these two subjects did not have previous experience in tertiary level education at all. Half of the students also favoured the idea of using the Multimedia-cum-Language Laboratory as a classroom for learning memo-writing, while 40% (4) were not sure. Only 1 student seemed to dislike the idea. Perhaps, these students were still a little sceptical about the idea of using e-mail in memo-writing and the Multimedia Laboratory as their classroom for memo-writing activities because they had never been exposed to the use of e-mail and Multimedia Laboratory in language learning before.

In terms of technical support, 60% (6) of the subjects thought that the technical support was 'average'. 5 of these 6 students were actually not new students at ITD because prior to joining the BTEC HND (Business) programme, they were already taking UTM Diploma courses at the same college. Therefore, they were probably evaluating the technical support at the college based on their previous experience. Another three out of the total ten subjects rated the service as 'poor'. These students were most probably not satisfied with overload of data in the hard disk that

should have been deleted and dealt with by the technicians and their assistants. Some of the processors were outdated and data overload could prevent the computers from functioning well. Only one subject, who did not have previous experience in tertiary level education, thought that technical support was 'good'.

With regard to students' perceptions on the benefits and limitations of using e-mail in memo-writing and their opinions about their own performance in electronic memo-writing before e-mail was included as part of the memo-writing activities, 70% (7) were not sure whether the use of e-mail would not have any effect on their understanding of the memo format, while 30% (3) disagreed that using e-mail would not change anything. This was probably because the students were not exposed to the use of e-mail in memo-writing yet at this stage and could not anticipate whether it would have any effect on their understanding of the memo format while the other 30% (3) of the subjects who disagreed were students who had previous learning experience in computer sciences and multimedia at tertiary level.

In addition, 90% (9) of the subjects agreed that using electronic memo templates would help them gain more marks on format in memo-writing while only 1 subject, who had no previous experience in tertiary level education, was not sure. Finally, more

than 50% (5) of the subjects agreed that using e-mail would help memos to have more business-like appearance while 30% (3) were not sure. Only 1 subject, who was the same student who had no previous experience in tertiary level education, seemed to disagree. Further details regarding the case summary of items in questionnaires are provided in Appendix C.

4.1.2 The second questionnaire (after the use of e-mail)

In the second questionnaire, the students were encouraged to express more of what they thought of their own performance as well as the benefits and limitations of using e-mail after having gone through electronic memo-writing activities. In addition, their interest in learning memo-writing in FIE 1114 as a result of using e-mail, was also given due emphasis. A 5-point rating as indicated in 4.1.1(b)-ii above was used to measure students' responses in the second questionnaire.

Table 13 : Frequency of students' response to Items 1-6 of the Second Questionnaire

Item	Rating	Strongly agree	Agree	Not Sure	Disagree	Strongly disagree
Item 1		0	7	3	0	0
Item 2		0	0	3	6	1
Item 3		0	7	3	0	0
Item 4		0	0	1	9	0
Item 5		0	0	2	4	4
Item 6		0	0	0	8	2
Legend: Item 1=I used to make quite a number of unnecessary simple spelling mistakes in conventional memo-writing Item 2=I keep making the same spelling mistakes even with the use of e-mail in memo-writing Item 3=I always use the spellchecker before sending memos via e-mail Item 4=I think using e-mail only makes memo-writing more difficult to learn Item 5=There is nothing great about using e-mail in memo-writing Item 6=I find spending four hours a week in the multimedia lab simply boring						

Table 13 above shows that 70% (7) of the subjects agreed that they used to make unnecessary simple spelling errors before the use of e-mail in memo-writing while 30% (3) were not sure. More than 60% (6) of the subjects disagreed to the statement in item no. 2 which suggests that they kept making the same spelling errors even with the use of e-mail in memo-writing, while the same 3 subjects were still not sure of their own performance. Similarly, 70% agreed that they always used the spellchecker before sending memos via e-mail whilst the same 3 subjects were still not sure. Using the spellchecker was something quite new to these students because some of them had never used it before while the rest were not even aware of it. In addition, there were two options for spellcheck, one manual and the other automatic. A few of the students had chosen the option of manual spellcheck. Therefore, sometimes they either had forgotten to perform the manual spellcheck before sending out their electronic memos or they had forgotten to correct the spelling errors highlighted by the spellchecker.

Nevertheless, almost all of the subjects (90%) seemed to disagree that using e-mail makes memo-writing more difficult to learn, while 1 subject was not sure about that statement. 40% (4) of the subjects seemed to strongly disagree with the suggestion that there was nothing great about using e-mail in memo-writing while

another 40% also disagreed. Only 2 subjects were not sure. Finally, all the students appeared to disagree with item no. 6 which stated that spending four hours per week in the multimedia laboratory was boring. Generally, most of the students' responses in the last three items of the second questionnaire indicated that the students thought that the use of e-mail could enhance their interest in learning memo-writing because it would make learning less difficult for them. Furthermore, the majority of them did not think that it was 'nothing great' compared to conventional memo-writing and that spending four hours per week in the multimedia laboratory was 'boring' for them. When learning became less difficult, 'great' and not 'boring', this could indeed enhance students' interest, which could be one of the key factors that had positive effects on students' memo-writing skills, particularly with regard to the memo format and the number of occurrences of spelling errors. However, this had to be further justified by analysing the students' texts, both conventional and electronic memos, which is discussed in the following section.

4.2 Quantitative data analysis of students' texts

In an attempt to find answers to the research questions in the present study, both descriptive and inferential statistical analyses were performed on the data obtained from the students' texts, which provided further evidence of the students' performance in memo-writing. There were four

continuous in-class assessments (two conventional and the other two electronic memo-writing) given to all subjects and at the end of the semester, students had their Final Assessment. Altogether, there were 50 memos (30 conventional and 20 electronic) which had been analysed quantitatively with the help of *SPSS for Windows ver 10.01*.

4.2.1 Descriptive statistics of students' texts

4.2.1.1 The memo format

Table 14 below shows the scores for each of the assessments that students took, comprising the scores for on-going in-class assessments before and after e-mail was used, as well as their scores in the end-of-semester Final Assessment where they had to write conventional memos.

Table 14: Students' scores for memo format

Conditions Subjects	CMIC ₁	CMIC ₂	EMIC ₁	EMIC ₂	CMFA _{FORM}
S01	10.0	10.0	10.0	10.0	10.0
S02	6.0	6.0	10.0	10.0	10.0
S03	4.0	4.0	8.0	7.0	10.0
S04	10.0	10.0	10.0	10.0	10.0
S05	8.0	8.0	10.0	10.0	10.0
S06	8.0	9.0	10.0	10.0	10.0
S07	7.0	7.0	8.0	8.0	9.0
S08	8.0	8.0	9.0	9.0	10.0
S09	6.0	6.0	9.0	8.0	9.0
S10	6.0	7.0	7.0	9.0	10.0
<p><u>Legend:</u></p> <p>CMIC₁ = Conventional Memo In-Class Assessment 1</p> <p>CMIC₂ = Conventional Memo In-Class Assessment 2</p> <p>EMIC₁ = Electronic Memo In-Class Assessment 1</p> <p>EMIC₂ = Electronic Memo In-Class Assessment 2</p> <p>CMFA_{FORM} = Conventional Memo Final Assessment</p>					

Based on the explanation presented in Chapter Three (see p. 68 for further details), the scores in Table 14 above were obtained. As there were ten features of the memo format that were analysed, therefore the maximum score for the memo format would be 10.0, which meant that all the first six features were present and the other four features were absent, as discussed earlier in Chapter Three (p. 68).

When the students' scores during in-class conventional and electronic memo-writing assessments were compared, they seem to indicate that the students had either maintain their maximum score (S01 and S04) or perfected their scores, except for S03 and S09, where there was a slight decrease in the scores of the second in-class electronic memo-writing assessment, as shown in Table 14 (p. 87). Nevertheless, another three subjects (S02, S05 and S06) had managed to obtain the maximum 10.0 score during in-class electronic memo-writing assessments on both occasions. In addition, when the scores for both types of memo-writing assessments were averaged, their respective average scores had either been maintained at 10.0 or perfected (see Table 15, p. 89).

Table 15 : Average scores for memo format

Conditions Subjects	CMIC _{AV}	EMIC _{AV}	CMFA _{FORM}	Mean (Subjects)
S01	10.0	10.0	10.0	10.0
S02	6.0	10.0	10.0	8.7
S03	4.0	7.5	10.0	7.2
S04	10.0	10.0	10.0	10.0
S05	8.0	10.0	10.0	9.3
S06	8.5	10.0	10.0	9.5
S07	7.0	8.0	9.0	8.0
S08	8.0	9.0	10.0	9.0
S09	6.0	8.5	9.0	7.8
S10	6.5	8.0	10.0	8.2
Mean (Conditions)	7.4	9.1	9.8	Overall mean 8.8
<u>Legend:</u> CMIC _{AV} = Conventional Memo In-Class Assessment (Average) EMIC _{AV} = Electronic Memo In-Class Assessment (Average) CMFA _{FORM} = Conventional Memo Final Assessment				

Table 15 above shows that the mean scores for EMIC_{AV} and CMFA_{FORM} had increased by 1.7 and 2.4 respectively, compared to the mean score for CMIC_{AV} (students' conventional memos). Results also showed that both mean scores for EMIC_{AV} (9.1) and CMFA_{FORM} (9.8) were above the overall mean score by 0.3 and 1.0 respectively. Only 4 students in EMIC_{AV} could not achieve more than 8.8 whilst all students obtained more than 8.8 in CMFA_{FORM}, compared to only 2 out of the total 10 students who managed to score above 8.8 in CMIC_{AV}. All individual scores in CMFA_{FORM} also had exceeded the overall mean score of 8.8 as well as their respective individual mean scores, ranging from 7.2 to 10.0 with 80% (8) of the subjects scoring the maximum score of 10.0 for the memo format.

Meanwhile, additional analysis was also done on the ten features of the memo format (ai – biv, see p. 68) and the mean scores for features in memo format in different conditions were obtained, as shown in the following table:

Table 16: Mean scores for features in memo format in different conditions for all subjects

Features	Conditions	CMIC _{AV}	EMIC _{AV}	CMFA _{FORM}	Mean scores (features)
ai		5.0	8.0	10.0	7.7
aii		10.0	10.0	10.0	10.0
aiii		10.0	10.0	10.0	10.0
aiv		9.0	10.0	10.0	9.7
av		8.0	10.0	10.0	9.3
avi		2.0	7.5	10.0	6.5
bi		10.0	10.0	10.0	10.0
bii		10.0	10.0	10.0	10.0
biii		5.0	8.0	9.0	7.3
biv		5.0	7.5	9.0	7.2
Mean scores (conditions)		7.4	9.1	9.8	Overall mean 8.8
Legend:					
ai	=	The presence of the word “Memo” or equivalent			
aii	=	The presence of the recipient’s name or designation			
aiii	=	The presence of the sender’s name or designation			
aiv	=	The presence of the date			
av	=	The presence of the subject			
avi	=	The presence of the message in proper text organisation			
bi	=	The absence of the sender’s address			
bii	=	The absence of the recipient’s address			
biii	=	The absence of salutation			
biv	=	The absence of complimentary close			
CMIC _{AV}	=	Conventional Memo In-Class Assessment (Average)			
EMIC _{AV}	=	Electronic Memo In-Class Assessment (Average)			
CMFA _{FORM}	=	Conventional Memo Final Assessment			

It was found that the subjects did not seem to have problems in features aii (the presence of recipient’s name and/or designation), aiii (the presence of sender’s name and/or designation), bi (the absence of sender’s address) and bii (the absence of recipient’s

address). However, the mean scores for the following features, fell below the overall mean score of 8.8, even after using e-mail:

- (1) ai = the presence of the word “Memo” or equivalent
- (2) avi = the presence of the message in proper text organisation
- (3) biii = the absence of salutation
- (4) biv = the absence of complimentary close

Although this was true, the mean scores for each of these four features had increased in EMIC_{AV} compared to their scores in CMIC_{AV}, as shown in Table 16 (p. 90) by 3.0, 5.5, 3.0 and 2.5 respectively. All scores in EMIC_{AV} seemed to indicate an increase compared to those of conventional memos in CMIC_{AV}. In the Final Assessment, it was found that the mean scores for all these four features had increased above the overall mean score of 8.8. As a matter of fact, two of these four features, ai (the presence of the word “Memo” or equivalent) and avi (the presence of the message in proper text organisation) had attained a perfect score of 10.0 for the memo format in the Final Assessment while the other two features, biii (the absence of salutation) and biv (the absence of complimentary close), though had not attained the perfect score of 10.0 for the memo format, showed remarkable improvement by attaining the score of 9.00, which was above the overall mean score of 8.8 (for further details, see *Appendix D*:

*Detailed analysis of features in the memo format and Appendix F :
SPSS Output for Descriptive Statistics).*

For the first feature, which is the presence of the word “Memo” or equivalent, 40-60% (4-6) of the subjects had left it out and did not write it in both in-class conventional memos. However, eventually, only 20% (2) still did not type this word in their electronic memos despite the fact that the word could only be placed either together with the subject (S07) or after the subject line (S09) as shown below:

*From: Siti Normah Mat <s07@itdkel.edu.my>
To: Zarina Mohd Ali <zarina@itdkel.edu.my>
Sent: 01 Oct 2001 11:30:25
Subject: MEMO: An update on the Compaq and Hewlett-Packard merger*

Here is an update on

*From: Zulkifli Abdul Aziz <s09@itdkel.edu.my>
To: Zarina Mohd Ali <zarina@itdkel.edu.my>
Sent: 01 Oct 2001 11:30:25
Subject: A report on update on Compaq-HP merger*

MEMO

Here is a report on

Nevertheless, during the Final Assessment, this problem did not occur anymore. This was perhaps due to the fact that the way e-mail messages are presented, resembles the way conventional memos are written. Hence, the electronic memos was indeed a way of making students become familiar with memo-writing, although certain adaptation might be necessary, as indicated above

in the placement of the word “Memo” or equivalent, in electronic memos.

The fourth feature was the presence of the date. During conventional memo-writing assessments, one student (S03) had forgotten to write the date. As a matter of fact, the subject was also missing from both in-class conventional memos:

*To: Juliana Ismail
From: Encik Azlan Yusoff*

Dear Sir,

Here is the update on

*To: Juliana Ismail
From: Encik Mohd Amin*

Dear Sir,

Responding to your previos memo

However, this problem was completely solved during electronic memo-writing because the e-mail software would automatically have the date accurately displayed, inclusive of time.

*From: Juliana <s03@itdkel.edu.my>
To: Zarina Mohd Ali <zarina@itdkel.edu.my>
Sent: 01 Oct 2001 11:29:01
Subject: Report on causes for employees late for work*

Dear Madam,

I want to submit report on

Thank you

Eventually, all the students did write the date in their conventional memos in the Final Assessment. This trend was also similarly observed for the fifth feature, which is, the presence of the subject. Only two students (S03 and S09) did not write the subject in their in-class conventional memos while the rest of the students did have the subject in their conventional as well as electronic memos. Both students however, did not leave the subject blank in their electronic memos. The reason for this is most probably due to the fact that the e-mail software would automatically ask the sender first whether or not to proceed sending out the e-mail without the subject. Therefore, the sender would be reminded to type something as the subject for their electronic memos. It was also found that all students did have the subject of the memo written in the Final Assessment.

The sixth feature was concerned with the presence of the message in proper text organisation. This was also lacking in 80% of the total in-class conventional memos but the percentage later decreased to only between 10-40% of the total electronic memos. However, during the Final Assessment, it was found that all of the students had finally managed to properly organise the message into three sections (introduction, body and closing). The researcher believed that this could be due to the fact that it did not

contradict with the way letters and essays were composed. All students needed was frequent practice.

The last two features, the absence of salutation and complimentary close were the only features that students still had problems with, even during electronic memo-writing assessments and the Final Assessment. Nevertheless, only 10% of the subjects still had salutation and complimentary close respectively in their memos during the Final Assessment while 20% and 30% of the subjects still had salutation and complimentary close in their electronic memos respectively. The reason for this could be that a few students took some time to get used to writing memos and differentiating the memo format from that of the letter (see *Appendix K: Samples of students' conventional and electronic memos*).

The other features which are not discussed in great length are namely the features which students did not seem to have any problems, even at the initial stage before the use of e-mail such as the presence of the recipient's name or designation, the presence of the sender's name or designation, the absence of the sender's address and the absence of the recipient's address. At least, all of the students appeared to have managed to identify four important features of the memo, which is actually a form of internal business

correspondence that does not need to have the address of both the sender and the recipient and having the name or designation of both the sender and the recipient would be sufficient.

4.2.1.2 Spelling errors

Similarly as in 4.2.1.1, Table 17 below shows the normalized counts for the number of occurrences of spelling errors (see p. 69) produced by the students for all the assessments based on the following formula (Biesenbach-Lucas and Wesenforth, 2001):

$$\frac{\text{The number of occurrences of spelling errors}}{\text{Text length}} \times 100$$

Table 17 : Normalized counts for spelling errors

Conditions Subjects	CMIC ₁	CMIC ₂	EMIC ₁	EMIC ₂	CMFA _{SPER}
S01	5.04	4.44	1.33	1.05	0.00
S02	7.41	4.88	1.35	0.54	0.41
S03	6.96	6.06	2.80	1.18	0.78
S04	5.31	4.32	1.32	0.63	0.00
S05	4.35	2.03	1.94	0.62	0.37
S06	5.83	3.50	0.66	0.00	0.00
S07	7.92	6.56	2.14	1.20	0.92
S08	3.81	2.33	0.74	0.00	0.00
S09	7.77	4.80	2.24	1.80	0.77
S10	9.00	5.93	2.29	0.56	0.44
Legend: CMIC ₁ = Conventional Memo In-Class Assessment 1 CMIC ₂ = Conventional Memo In-Class Assessment 2 EMIC ₁ = Electronic Memo In-Class Assessment 1 EMIC ₂ = Electronic Memo In-Class Assessment 2 CMFA _{SPER} = Conventional Memo Final Assessment					

Based on the normalized counts in Table 17 above, the figures clearly show that students' normalized counts for spelling errors during in-class electronic memo-writing assessments were better

than the ones during in-class conventional memo-writing. In addition, the normalized counts for the Final Assessment were also better than those of the in-class conventional memos. However, only two subjects (S06 and S08) managed to obtain zero number of occurrences of spelling errors in one of the two electronic memo-writing assessments and were able to maintain this achievement during the Final Assessment, apart from another two subjects (S01 and S04). Nevertheless, when these normalized counts for each condition were averaged, results indicated that students' average normalized counts for electronic memo-writing assessments and the Final Assessment had far exceeded the overall mean of 2.34, as shown in Table 18 below:

Table 18 : Average normalized counts for spelling errors

Conditions Subjects	CMIC _{AV}	EMIC _{AV}	CMFA _{SPER}	Mean (Subjects)
S01	4.74	1.19	0.00	1.98
S02	6.15	0.95	0.41	2.50
S03	6.51	1.99	0.78	3.09
S04	4.82	0.98	0.00	1.93
S05	3.19	1.28	0.37	1.61
S06	4.67	0.33	0.00	1.67
S07	7.24	1.67	0.92	3.28
S08	3.07	0.37	0.00	1.15
S09	6.29	2.02	0.77	3.03
S10	7.47	1.43	0.44	3.11
Mean (Conditions)	5.42	1.22	0.37	Overall mean 2.34
Legend: CMIC _{AV} = Conventional Memo In-Class Assessment (Average) EMIC _{AV} = Electronic Memo In-Class Assessment (Average) CMFA _{SPER} = Conventional Memo Final Assessment				

Table 18 above shows that the mean scores for EMIC_{AV} and CMFA_{SPER} had decreased by 4.20 and 5.05 respectively, compared

to the mean scores for CMIC_{AV}. Results also showed that both mean scores for EMIC_{AV} (1.22) and CMFA_{SPER} (0.37) were below the overall mean score of 2.34 by 1.12 and 1.97 respectively. All students in EMIC_{AV} and CMFA_{SPER} had achieved less than 2.34, whereas none of the subjects could achieve below 2.34 in CMIC_{AV}.

Meanwhile additional analysis was also done on the classification of spelling errors according to seven major parts of speech (see p. 43 and p. 69) in each condition and the mean scores for each classification of spelling errors in different conditions were obtained, as shown in the following table:

Table 19 : Mean scores for classification of spelling errors in different conditions for all subjects

Conditions Features	CMIC _{AV}	EMIC _{AV}	CMFA _{SPER}	Mean scores (Classification)
a	29.0	9.0	6.0	14.7
b	25.5	7.5	3.0	12.0
c	9.0	2.5	0.0	3.8
d	0.0	0.0	0.0	0.0
e	0.0	0.0	0.0	0.0
f	0.0	0.0	0.0	0.0
g	0.0	0.0	0.0	0.0
Mean scores (Conditions)	9.0	2.7	1.3	Overall mean 4.3
Legend: a = Nouns b = Main verbs c = Modifiers (adjectives and adverbs) d = Determiners e = Prepositions f = Conjunctions g = Others CMIC _{AV} = Conventional Memo In-Class Assessment (Average) EMIC _{AV} = Electronic Memo In-Class Assessment (Average) CMFA _{SPER} = Conventional Memo Final Assessment				

The scores in Table 19 (p. 98) show the average number of occurrences of spelling errors in different conditions for all subjects according to the classification as mentioned earlier (p. 98), from which the mean scores were obtained.

The figures in Table 19 (p. 98) show that both the scores for $EMIC_{AV}$ and $CMFA_{SPER}$ had decreased remarkably by 6.3 and 7.7 respectively, compared to the mean score for $CMIC_{AV}$. Both scores (2.7 and 1.3 respectively) were also below the overall mean score of 4.3. Nevertheless, only the mean score for modifiers (adjectives and adverbs) was below the overall mean score whereas both the mean scores for nouns and main verbs were 14.7 and 12.0, which were above the overall mean score of 4.3. The differences were 10.4 and 7.5 respectively. It was found that subjects seemed to have problems with nouns, main verbs and modifiers (adjectives and adverbs). However, it is important to point out here that there had been steady progress for the three classifications from $CMIC_{AV}$ to $EMIC_{AV}$ and $CMFA_{SPER}$. As a matter of fact, 2 students managed to obtain the perfect score of zero number of occurrences of spelling errors in $EMIC_2$ and the number of students who achieved the perfect score for spelling errors had doubled in the Final Assessment (see *Appendix E: Detailed analysis of spelling errors* and *Appendix F: SPSS Output for Descriptive Statistics* for further information).

As mentioned earlier, with regard to the number of occurrences of spelling errors, students seemed to have problems in three major parts of speech. A total of 174 occurrences of spelling errors for 44 words in three types of classification, namely nouns, main verbs and modifiers (adjectives and adverbs) had been identified in 50 memos produced by 10 students in the present study. Most of the spelling errors that were not highlighted by the spellchecker occurred mainly due to the following reasons:

(1) words that have similar sounds or homonyms

(a) 'stuff' for 'staff'

"After carrying out my investigation, I found out from our stuff that"

(S01)

(b) 'leave' for 'live'

"Some of the employees leave far away from our office"

(S03)

(c) 'by' for 'buy'

"... it is better to by the RND400 model"

(S07)

(2) confusions between nouns and main verbs

(a) 'advice' for 'advise'

"I would like to advice the company to"

(S01)

(b) 'complains' for 'complaints'

"I have received many complains from our employees"

(S02)

(3) other words which were correctly spelt but wrongly used

(a) 'through' for 'thorough' (wrong choice of word used)

"I have made a through investigation and found out"

(S05)

(b) 'lost' for 'lose' (wrong form of verb used)

"... they will lost"

(S09)

The rest of the spelling errors were spelling errors that occurred during the in-class conventional memo-writing assessments and Final Assessment that were not corrected as well as the electronic memo-writing assessments that were either highlighted by the spellchecker but failed to be corrected by the students or failed to be highlighted by the computer because the students had forgotten to perform the manual spellchecks. These spelling errors were numerous and of various nature like:

(1) omission of a letter

(a) 'anounced' for 'announced'

"...the American Congress anounced that"

(S10)

(b) *"Enviromentalists are also worried that"*

(S09)

- (2) L1 interference
 - (a) 'dokumen' for 'documents'

"... since we do not have too many dokumen to copy...."

(S07)
 - (b) 'notis' for 'notice'

"... we should give notis to the bus operator"

(S04)
- (3) typing errors
 - (a) 'detials' for 'details'

"... details about the merger"

(S05)
 - (b) 'reguliar' for 'regular'

"... our regular customers"

(S03)

4.2.2 Inferential statistics: The Wilcoxon matched-pairs signed-ranks test

The value of the T statistic had been computed with the help of *SPSS for Windows ver. 10.01* to determine whether the use of e-mail had any significant effect on the students' scores on memo format and spelling errors. This was done to test the null hypotheses formulated based on the first and second research questions (p. 11), that is, whether to accept or to reject them.

The following tables (Table 20a & 20b, p. 103 and Table 21a & 21b, p. 104) show the *SPSS* output for the computations of the Wilcoxon matched-pairs signed-ranks test of each pairwise comparison $EMIC_{AV}$ - $CMIC_{AV}$ for the memo format and spelling errors respectively:

Table 20a: SPSS Output of Wilcoxon Signed Ranks Test for Memo Format (EMIC_{av} - CMIC_{av})

Ranks			
	N	Mean Rank	Sum of Ranks
EMICav - CMICav: Negative Ranks	0 ^a	,00	,00
Positive Ranks	8 ^b	4,50	36,00
Ties	2 ^c		
Total	10		

- a. EMICav < CMICav
- b. EMICav > CMICav
- c. CMICav = EMICav

Test Statistics^a

	EMICav - CMICav
Z	-2,527 ^a
Asymp. Sig. (2-tailed)	,01

- a. Based on negative ranks.
- b. Wilcoxon Signed Ranks Test

Table 20b : SPSS Output of Wilcoxon Signed Ranks Test for Memo Format (CMFA_{FORM} - CMIC_{av})

(b) CMFA_{FORM} - CMIC_{av}

Ranks			
	N	Mean Rank	Sum of Ranks
CMFA-FORM - CMIC: Negative Ranks	0 ^a	,00	,00
Positive Ranks	8 ^b	4,50	36,00
Ties	2 ^c		
Total	10		

- a. CMFA-FORM < CMICav
- b. CMFA-FORM > CMICav
- c. CMICav = CMFA-FORM

Test Statistics^a

	CMFA-FORM CMICav
Z	-2,533 ^a
Asymp. Sig. (2-tailed)	,01

- a. Based on negative ranks.
- b. Wilcoxon Signed Ranks Test

Table 21a : SPSS Output of Wilcoxon Signed Ranks Test for Spelling Errors (EMIC_{av} - CMIC_{av})

Ranks			
	N	Mean Rank	Sum of Ranks
EMICav - CMICav Negative Ranks	10 ^a	5,50	55,00
Positive Ranks	0 ^b	,00	,00
Ties	0 ^c		
Total	10		

a. EMICav < CMICav

b. EMICav > CMICav

c. CMICav = EMICav

Test Statistics^b

	EMICav - CMICav
Z	-2,803 ^a
Asymp. Sig. (2-tailed)	,01

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 21b : SPSS Output of Wilcoxon Signed Ranks Test for Spelling Errors (CMFAsper - CMIC_{av})

Ranks			
	N	Mean Rank	Sum of Ranks
CMFAsper - CMICav Negative Ranks	10 ^a	5,50	55,00
Positive Ranks	0 ^b	,00	,00
Ties	0 ^c		
Total	10		

a. CMFAsper < CMICav

b. CMFAsper > CMICav

c. CMICav = CMFAsper

Test Statistics^b

	CMFAsper - CMICav
Z	-2,803 ^a
Asymp. Sig. (2-tailed)	,01

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Based on the computations performed for each pairwise comparison for the memo format and spelling errors, results showed that, the calculated test statistic, T (the smaller value of the two sums of ranks) was less than the critical value of T in the table (see *Appendix F: Critical values of T for the Wilcoxon's signed-ranks and matched-pairs signed-ranks test*) according to each n number of subjects (which is reduced accordingly if there are ties). In relation to this, results indicated that:

- (i) there had been a change in students' memo format scores in $EMIC_{AV}$ compared to the ones in $CMIC_{AV}$
- (ii) there had been a change in students' memo format scores in $CMFA$ compared to the ones in $CMIC_{AV}$
- (iii) there had been a change in the number of occurrences of spelling errors produced in $EMIC_{AV}$ compared to the ones in $CMIC_{AV}$
- (iv) there had been a change in the number of occurrences of spelling errors produced in $CMFA$ compared to the ones in $CMIC_{AV}$

The advantage of using the Wilcoxon matched-pairs signed-ranks test is that it has the ability to show the direction of the change that took place and its magnitude, even if a two-tailed test was performed instead of a one-tailed test. In the present study, there were more positive ranks in the analysis of the memo format because in general, students' average scores had increased towards the perfect maximum score of 10.0. Therefore, the calculated T statistic was based on the sum of the less frequent ranks, which, in this case, were the negative ranks. On the other hand, for the

analysis of spelling errors, there were more negative ranks because in general, students' average normalized counts became less, moving towards achieving zero number of occurrences of spelling errors. Therefore, the calculated T statistic was based on the sum of the less frequent ranks, which, in this case, were the positive ranks. By comparing the calculated T to the critical value of T in the table (see *Appendix G: Critical value of T for the Wilcoxon signed-ranks and matched-pairs signed-ranks tests*), it was found that the values of calculated T were both significant. Thus, it may be concluded that there had been positive changes that took place as a result of the use of e-mail in memo-writing, with regard to the students' scores in the memo format and spelling errors.

4.3 Qualitative data analysis

4.3.1 The last item in the second stage questionnaire

As mentioned earlier, the last item in the second stage questionnaire was an open-ended question. Thus, it had to be analysed qualitatively. However, when all the questionnaires had been collected and analysed, it was discovered that this item had been left unanswered by all of the subjects in the study. Hence, the researcher decided to get overall comments from the subjects from the other instruments.

4.3.2 The interview transcripts

As mentioned earlier, the interviews were not conducted entirely in English but rather Malay was used most of the time, in order to obtain in-depth view of what had been taking place, from the students' perspective. Once the interview transcripts had been verified by each respective subject, information gathered from the transcripts were analysed. As there were ten subjects who participated in the present study, a total of ten separate interviews, resulting in ten interview transcripts were analysed qualitatively.

In response to the first question, which was concerned with the students' general opinions with regard to the use of e-mail in memo-writing (see *Appendix B: Interview questions*), all subjects generally viewed the use of e-mail in memo-writing as positive and favourable.

"...saya rasa [penggunaan e-mel dalam penulisan memo] baik dan patut digalakkan kerana bukan sahaja senang digunakan tetapi jimat masa, jimat kertas, jimat dakwat [pen] saya (ketawa)..."

Translation:

"... I think [the use of e-mail in memo-writing] is good and should be encouraged because it is not only convenient but it also saves time, paper and my [pen] ink (laughs)..."

(S01)

As a matter of fact, subject S02, who seemed to be the most computer-savvy of all the students, even went to the extent of suggesting that the use of e-mail be incorporated into the syllabus of all BTEC HND (Business) units:

"Kalau semua mata pelajaran lain dalam BTEC ini ada dimasukkan penggunaan e-mel dalam silabus, kan bagus? Kalau nak buat announcement atau lecturer nak bagi arahan tentang assignment - senang, sekali click, semua orang terima [maklumat]"

Translation:

"Wouldn't it be good if all the other units incorporate the use of e-mail in their syllabuses? If anybody wants to make any announcement or if the lecturer wants to give any instructions regarding assignments – it's so easy, with one click, everybody will receive [the information]"

(S02)

The second question attempted to find out whether the students thought that the use of e-mail had helped them understand the memo format more effectively. Most of them agreed that using e-mail helped them understand the memo format more effectively because, according to these students, by having access to the word processor and the Internet at the same time, they were able to obtain the memo templates from the word processor and as well as samples of memos from the Internet and share the information among them.

"Sangat membantu. Bukan sahaja dapat guna komputer, maksud saya, kita boleh guna [Microsoft] Word, tapi dalam waktu yang sama, boleh guna internet... bukan saja boleh tengok contoh daripada template yang ada dalam [Microsoft] Word tapi boleh juga tengok atau pun download contoh-contoh daripada internet, kemudian itu, boleh kongsi dengan kawan-kawan yang lain dengan cara hantar e-mel."

Translation:

"It really does help. Not only we can use the computer, I mean, we can use [Microsoft] Word, but at the same time, we can surf the Internet ... not only we can look at the samples from the existing templates in [Microsoft] Word, but we can also look at the examples available in the Internet, download these examples and then share this information with the other friends via e-mail."

(S01)

"Lebih baik daripada cara lama, maksud saya, tak guna e-mail"

Translation:

"It's better than the old way, I mean [the one] without the use of e-mail"

(S03)

"Saya rasa yang ini lebih berkesan"

Translation:

"I think [electronic memo-writing] is more effective"

(S02)

In addition, they also claimed that using e-mail made them feel more confident that the memos which they produced had acceptable standard format. This is because, according to the subjects, all the resources were there and whenever in doubt, they could turn to the instructor and peers for advice, even when they were at home or at the *cybercafe*.

"Kadang-kadang, mudah lupa, tapi kalau dengan cara ini, kalau tak ingat pun, boleh check, atau pun boleh tanya pensyarah dan kawan-kawan yang lain, tak kira di sini atau pun di rumah atau di cybercafe. Confident sikit"

Translation:

"Sometimes I can easily forget, but with this [electronic memo-writing], even if I forget [certain things], I can always check it out, or ask [my] lecturer and other friends, [whether] here, at home or at the cybercafe. Makes me feel more confident"

(S08)

"Walaupun saya faham bila tengok contoh dalam kelas, tapi bila saya nak buat sendiri, rasa tak confident pula. Tapi lama-kelamaan, dengan contoh-contoh yang senang didapati daripada template dan contoh-contoh daripada Internet, tak lah susah sangat. Lagipun, kawan-kawan selalu tolong kalau mereka ada contoh-contoh lain, biasanya kami share melalui e-mel"

Translation:

"Even though I understood what was taught in the classroom, when I wanted to do it myself, I did not seem to have the confidence. But, soon, after looking at the examples which I could easily get from the templates and those from the Internet, it became less difficult. Anyway, my friends always help me out by sending other examples, usually we share [this information] among us via e-mail"

(S10)

In response to the third question, half of the students admitted that initially they did have problems in using the spellchecker simply because they never knew that it was there all the while.

"Mula-mula susah juga sebab tak biasa guna. Sebenarnya, saya tak tahu pun function itu ada...."

Translation:

At first, it was rather difficult because I wasn't used to it. The truth is, I never knew that the function existed...."

(S01)

"Payah juga, tapi bila dah mula guna, mudah saja. Saya tak pernah guna sebab saya tak tahu benda itu ada"

Translation:

"Rather difficult at first, but after a while, it was easy. I never used it before because I never knew about it"

(S08)

On the other hand, the other half admitted that even though they were aware of the availability of the spellchecker, they had never used the feature.

"Saya tahu function spellchecker tu ada tapi entahlah..., tak pernah guna pun...."

Translation:

"I am aware of the spellchecker function, but I don't know why..., I've never used it...."

(S02)

"Saya tahu, tapi tak pernah guna"

Translation:

"I am aware [of it], but I have never used it"

(S04)

However, all of them agreed that the spellchecker was actually a very useful feature and it was also easy to use.

"Sangat berguna dan mudah sekali...."

Translation:

"Very useful and so easy...."

(S09)

"Saya rasa memang berguna dan mudah pula cara nak menggunakannya...."

Translation:

"I think it is indeed useful and it is very easy to use"

(S07)

Later, when asked whether the use of e-mail had helped minimise the number of occurrences of spelling errors during memo-writing activities, all subjects agreed that using e-mail had indeed minimised the frequency of spelling errors in memo-writing. Nevertheless, all of them also admitted that it took a little while for them to get used to performing spellchecks, acknowledging spelling errors detected by this feature and eventually making other necessary corrections before sending out the memos via e-mail. In addition, the human factor was still of great importance.

"Sudah tentu kesalahan ejaan dapat dibaiki, jadi bilangannya pun kurang... tapi kalau lupa nak buat spellcheck atau lupa nak baiki kesalahan ejaan yang di 'highlight' kan sebelum hantar memo dengan e-mel, habislah ... sebab ada yang tidak dibaiki secara automatik, jadi kita kena baiki sendiri"

Translation:

"It has indeed minimised spelling errors if the errors have been corrected ... but it won't be of any use if we forgot to perform a spellcheck or correct the errors highlighted [by the spellchecker] before sending out the memo via e-mail ... because there are spelling errors that are not automatically corrected [by the spellchecker], so we have to do it ourselves"

(S01)

"Sudah tentu, asalkan jangan lupa baiki kesalahan ejaan lain setelah buat spellcheck sebab mungkin ada yang tak dibaiki...."

Translation:

"Certainly, as long as one does not forget to correct other spelling errors after performing the spellcheck because there might be the ones that have not been [highlighted and] corrected..."

(S02)

"... memanglah berguna, tapi pelajar sendiri kenalah baiki kesalahan ejaan yang tak dibetulkan secara automatik oleh spellchecker...."

Translation:

"... it is indeed useful (to have this spellchecking feature), but it is the student himself/herself who has to correct the misspellings which have not been automatically corrected by the spellchecker"

(S05)

These students further related their own experience during the memo-writing activities by giving examples of spelling errors that had not been able to be identified by the spellchecker but were considered spelling errors because they were correctly spelt words but wrongly used:

"... contohnya, kesalahan ejaan 'stuff' dan 'advise' tak dibaiki dan tak di'highlight' pun, kerana memang ada perkataan itu. Yang sepatutnya, saya guna ejaan 'staff' dan 'advise'"

Translation:

"... for example, the spellings for 'stuff' and 'advise' were neither corrected nor highlighted, because there are such words. The words which I should have used were 'staff' and 'advise...."

(S01)

"... macam sesetengah perkataan seperti advise dengan advice, stuff dengan staff, complain dengan complaint, through dengan thorough...."

Translation:

"... like some words, for example, advise and advice, stuff and staff, complain and complaint, through and thorough,"

(S02)

Finally, the students were asked about what they thought of using the electronic mode instead of the conventional way of writing memos, in terms of benefits and limitations. All of the subjects appeared to unanimously agree that there seemed to be more benefits than limitations in the use of e-mail in memo-writing. Most of them admitted that they had become more interested in learning memo-writing and had come to realise that it was indeed an essential part of business communications. However, these students also revealed to the instructor that because there was an enormous source of information in abundance on the Net, there was a possibility of students plagiarizing other people's work from the sample memos that were available.

"Banyak [faedahnya]... tapi ada juga keburukannya, sebab banyak contoh [memo] yang kita boleh dapat dalam internet, kalau malas nak buat sendiri, tiru saja yang orang lain dah buat, tapi pensyarah tentu tahu juga akhirnya... tapi secara umum, saya rasa lebih banyak manfaat daripada keburukannya. Saya tak tahulah orang lain, tapi saya sendiri rasa semakin seronok nak belajar ... baru saya sedar belajar menulis memo yang baik ini penting untuk dunia business...."

Translation:

"Plenty [of benefits]... however, because there are many samples [memos] available on the Net, if you're too lazy to write your own [memo], you can always copy the works of others, but surely the lecturer will eventually find out... however, generally speaking, I think there are more benefits than limitations ...I don't know about the others, but I personally find learning to be fun ... now I've come to realize that learning how to write effective memos is important in the world of business...."

(S06)

"...Barulah dapat benar-benar rasa macam tulis memo untuk business communication, sebab memang orang business selalu guna komputer dan pakai e-mel kalau nak hantar memo. Apa-apa pun akan ada kebaikan dan keburukan, tapi saya rasa kebaikannya jauh lebih banyak. Contohnya menjimatkan masa, kalau silap terus dapat baiki dengan cepat, boleh hantar the same copy kepada lebih daripada satu orang sekaligus. Tapi, kita juga akan terdedah kepada perkara-perkara seperti meniru, menipu dan sebagainya ...Kadang-kadang tu, agak slow, bila saya tanya technician, katanya 'server down' tapi ada sesetengah PC yang baru tu, laju saja... Walau bagaimanapun, yang pasti, nampak kemas dan cantik, kerana tulisan saya ni kadang-kadang saya sendiri pun tak boleh baca ...Seriously, saya rasa belajar menulis memo ini sangat penting bagi seorang student business"

Translation:

"... It makes you feel like you're really writing a memo in real-life business communication, because people really do use the computer and send memos via e-mail in business. Everything has its own advantages and disadvantages, but I think the advantages far outweigh its disadvantages. For instance, it is time-saving, if you've made a mistake, you can quickly correct it, you can also send the same copy to more than one person simultaneously. However, you are also exposed to copying, cheating and so on ... Sometimes the connection is a bit slow, when I asked the technician, he said, 'the server was down' but some of the new PCs seem to be working just fine ... But anyway, it looks nice and neat, much better than my own handwriting which I myself sometimes find it hardly legible...Seriously speaking, I think learning memo-writing is very important for a student taking a business course"

(S09)

Nevertheless, these subjects claimed that they had not taken advantage of the situation. As a matter of fact, they admitted that, by having access to this abundant information, it had encouraged them to be more creative in their work and co-operative with one another.

"Balik kepada soal meniru tadi, sebenarnya kalau nak tiru, tak semestinya ada e-mel, ada internet baru boleh tiru [hasil kerja orang lain]. Macam saya kata tadi, kalau kita tiru sekalipun, tentu pensyarah akan dapat tahu, habislah markah kita dan kena buat semula"

Translation:

"Back to the issue of copying, you don't actually need to have access to e-mail and the internet to be able to copy [the works of others]. Like I said before, even if we did copy, the lecturer would eventually find out, there goes our marks and we have to do it again.... "

(S06)

"Kesimpulannya, lebih baik cuba buat sendiri atau belajar daripada kawan-kawan yang lain atau cuba tolong kawan-kawan yang lain, daripada ambil jalan mudah dengan meniru [hasil kerja orang lain]. Yang susah nanti, kita sendiri"

Translation:

"To conclude, it's better to do it ourselves or try to learn from others or help them, rather than copying [the works of others]. In the end, we're the ones who will get into trouble.... "

(S08)

4.3.3 Instructor's notes

The instructor's notes were analysed in three parts:

- (a) before memo-writing activities had begun
- (b) during memo-writing activities
 - i. before the use of e-mail in memo-writing
 - ii. after the use of e-mail in memo-writing
- (c) after all memo-writing activities had been completed

Before memo-writing activities began, the researcher had observed that most students seemed to lack focus in learning. Even though full attendance in all classes was maintained, students tended to come late and fall asleep during lesson in the classroom. When asked, majority of them confessed that they were not sure whether they had the ability to pursue an English medium programme of study, even though they were well aware of its world-wide recognition. Many of them were not able to fully comprehend what went on during the first two weeks, mainly because most lecturers or instructors had to speed things up a little bit. This was probably due to the fact that registration was done one week later than its initial proposed date, due to some unforeseen circumstances, as noted by the researcher:

“.... The Programme Manager gave a telephone call to inform that she would be on leave for two weeks, following the sudden demise of her husband. She also informed me that she had spoken to the Chief Executive Officer and he had agreed to postpone the registration of the BTEC HND (Business) students until next week....”

In addition, in a conversation two weeks after registration, between the researcher and the BTEC HND Programme Manager who was also the students' academic advisor, the Programme Manager revealed that many of these students were still afraid that they might fail again, as they did in their previous tertiary level education at various private and public academic institutions, while the others who were fresh post-secondary

and technicians, so that four hours per week were allocated for the BTEC HND (Business) students during their FIE 1114 lesson.

At first, it had been observed that this move invited unpleasant remarks from academic staff who were not involved in the BTEC HND programme because they did not share privilege of using the Multimedia Lab. This restriction was enforced because some of the multimedia devices which could only be found in this laboratory and not in the other IT laboratories, had either been missing or damaged. However, the main reason was because the college authority was worried that students might misuse the non-stop Internet access via the college's networking system.

The BTEC HND (Business) students also complained that other (Malay medium UTM Diploma) students were also showing some form of resentment because they had limited access to the Multimedia Laboratory. However, when advised to just ignore those remarks, the BTEC HND (Business) students gradually began to put that aside and carried on with their daily activities. With the co-operation from the Programme Manager who was also the college's Deputy Director (Academic Affairs) and the Head of IT Department, both of whom were also involved in the college's BTEC HND Programme Committee, the matter was resolved.

The first stage questionnaire was then posted online via e-mail to all BTEC HND (Business) students who fulfilled the criteria established prior to data collection. The students had been reminded to type their own secret alphanumeric code and print the hard copy of the questionnaire before returning it manually in the instructor's mailbox after office hours the following week. They appeared to appreciate the fact that the instructor sincerely wanted them to provide 'real' feedback 'without fear or favour' which could be used to help improve things for their own benefits.

By this time, it had been noted that three out of the total thirteen BTEC HND (Business) students had not been attending classes regularly. Upon inquiry, it was found out that two of them had dropped out due to disciplinary and financial reasons while the other one had received an offer to study another programme of study in a local public university.

Meanwhile, at the same time, conventional memo-writing activities began to take place in the form of in-class assessments. It had been observed that even after going through a few examples, students found it difficult to complete their conventional memo-writing within one hour. In addition, the end product was also disappointing, especially in terms of the memo format and the number of occurrences of simple spelling errors. As had

been anticipated, only two students managed to get the memo format right, while the other students' texts failed to demonstrate that. However, spelling errors, even the simplest of words, were still there. It was observed that these two aspects were still clearly recurrent.

After one whole week of Mid Semester Break, it was class as usual for the students. Most of them appeared to look much better than they did at the beginning of the semester, though two of the subjects seemed a little distracted. Later, it was learnt that they were having a personal problem that had nothing to do with what was taking place inside the classroom.

Eventually, it was time for conventional memos to give way to electronic memos. The students' first time electronic memo-writing activity was not entirely plain-sailing. This was due to a misunderstanding that had occurred between the instructor and the technician on duty, who was still relatively new to the idea of using online computer applications in language learning, even though prior discussion had already taken place between the instructor and the technician. However, the matter was quickly resolved without much difficulty.

Due to the misunderstanding that occurred during the first attempt at electronic memo-writing activity, the instructor decided to postpone the session and resume the next day. Some of the academic staff seemed to have doubts whether students were able to withstand the demands of an overseas-based English medium programme of study. They were also doubtful whether they themselves were able to conduct lectures, tutorials and demonstrations in English if asked to do so. Therefore, quite a number of these lecturers chose not to 'get involved' in any way at all for fear that they might be asked to join the BTEC HND Programme Committee. This is understandable for it is a common thing for people to be doubtful and sceptical about something new mainly because of inadequate information, which eventually leads to inability to understand what it is all about and how it works. This should be viewed as one of the many challenges that need to be addressed.

The electronic memo-writing activities, as in earlier conventional memo-writing, were carried out in the form of in-class assessments. The students were told to use the new e-mail addresses from the e-mail accounts that have been set up with the help of the technician so that they could use the *Microsoft Outlook Express*. This time, when the counts of the features in the memo format and the number of occurrences of spelling errors in electronic memos were made, they appeared to have progressed.

The instructor noted a positive change in students' interest in learning memo-writing as a result of using e-mail. As a matter of fact, for the first time, students were willing to come early for class and they were more independent. In addition, they were also not eager to leave the 'classroom' (which was the multimedia-cum-language laboratory). It had also been observed that if a student had any problems, the one sitting next to him or her would not hesitate to offer help. This showed that the activities taking place had indeed encouraged a sense of shared responsibility.

Even though some positive aspects were identified, there were also some other 'negative' aspects that needed to be addressed. However, from the students' perspective, perhaps these aspects were not totally 'negative' after all. For example, after having completed their FIE 1114 assignments, it was observed that some of the students used the remaining time to do assignments given by other unit tutors.

It had also been noted that, although capable of completing one electronic memo-writing assignment within one hour, students tended to take too much time using the readily available graphics from the embedded graphic files or those which could be imported into the system, in their attempt to have a more presentable memo format. However, during class

discussion, the instructor did advise the students against spending too much time on graphics but rather suggested that they concentrated on getting the acceptable standard format and performing spellchecks before sending out the memo via e-mail. Further observation by the instructor and analysis of students' subsequent electronic memos seemed to indicate that they had taken the advice.

In addition, it had also been observed that in contrast with the in-class conventional memo-writing, even though students were also busy at work, this time, they seemed more 'relaxed' during in-class electronic memo-writing activities. This is probably due to the fact that having access to the Internet made them feel that they were 'connected' to the outside borderless world, even though they were physically confined to the four corners of the multimedia laboratory.

When the electronic memos were analysed, in general, it was found that the students' memo format seemed to have improved, compared to their conventional memos. They also made less spelling errors this time. However, thorough calculations involving statistical analysis had to be carried out in order to further justify this. Salutation and complimentary close could still be found in one or two of the students' texts. When these texts had been carefully analysed and compared to those of conventional

memos, based on the mean scores obtained, the researcher was of the opinion that the students seemed to do better in electronic memo-writing than they did in conventional memo-writing. Hence, the researcher decided to wait until the analysis of students' Final Assessment had been made, before drawing a conclusion on whether the use of e-mail indeed had any effects on the students' memo-writing skills. In addition, the researcher also came to realize that it was more convenient for her to keep proper records of her students' work.

While the electronic memo-writing activities were taking place, the second stage questionnaire was sent out to all students. By this time, there were only ten students left. Upon manual collection of the second set of questionnaires, the instructor had noticed that all of the students had left out the last item. When asked, half the students told the instructor that they did not know what to comment while the other half were somehow completely unaware of the last item. At this point of time, although most of the students' responses seemed to favour the use of e-mail in memo-writing, there was still one or two who appeared less excited than the others.

Students were also being honest during class discussion, when they admitted that they had either been unaware of the availability of the

spellchecker feature in both the word processing and e-mail softwares or that even though they were aware of it, they had never used the spellchecker before. Hence, it explains that when e-mail was used in memo-writing activities, initially students tended to forget to perform a spellcheck or ignore the spelling errors detected by the spellchecker before sending their memos via e-mail. As shown by their responses in the second questionnaire, students seemed to enjoy their lessons in the multimedia laboratory, something that was lacking in the typical classroom setting. Even the shy students, who were usually passive, began to interact with peers and the instructor in-class and online. As a matter of fact, some of them began using e-mail to communicate with the instructor and peers if they had problems not only in FIE 1114 memo-writing but other academic-related problems as well, which were not confined to FIE 1114.

Finally, it was time for the ultimate battery of tests, that is, the Final Assessment. In the Final Assessment, students reverted to the conventional way of writing memos, after having been exposed to the use of e-mail in memo-writing. However, memo-writing was only part of the two-hour written assessment. Hence, students were advised to allocate adequate time for all questions in the Final Assessment. During the Final Assessment, it had been observed that students were able to do just that. However, the typical examination-like setting did seem to make the

students look anxious and 'tensed', which was normal in any formal end-of-semester assessment.

Once the students' mean scores in the Final Assessment had been obtained, they were compared to the mean scores in different conditions earlier. The mean scores for both the memo format and the frequency of spelling errors in the Final Assessment were clearly better than their overall mean scores. Therefore, the researcher was convinced that using e-mail in memo-writing had indeed resulted in positive effects, with regard to the memo format and the number of occurrences of spelling errors. However, to find out whether these effects were really significant or not, hypotheses based on the research questions, had to be formulated and further statistical analysis was necessary to decide whether to accept or to reject these hypotheses.

After the Final Assessment was over, students came for the one-on-one interview session with the researcher. All of them had arranged separate interview sessions with the instructor on the same day. Two days after the interview sessions had taken place, the students, were asked to come again and verify the interview transcripts. The researcher began analysing the transcripts by reading the lines over and over again. Once in a while, the audio tapes, which had been used in recording the interviews, were

played over and over again. The whole process took about four to five weeks, before the researcher was able to have an overview of the students' transcripts.

The interview was conducted in an informal manner, more like a conversation. Although this helped to get students engaged in the 'conversation', there was an overload of information which was not related to the five central issues (see *Appendix B: Interview questions*). Hence, the transcripts had to be edited. It was also the opinion of the researcher that she was able to obtain more in-depth views from her subjects in this way because the interview is on a face-to-face, one-on-one basis and it was conducted mainly in the subjects' native language. In other instruments, the language used was English, which was the subjects' second language.

From her observation, the researcher found that students had come for the interview willingly. As a matter of fact, they seemed to be more than glad to have this 'conversation' with their instructor. Therefore, the researcher believed that information gathered from this instrument was both valid and reliable, and that it could be used in triangulation to the information gathered from other instruments to support the findings in the present study.

4.4 Conclusion

In the present study, more than one instrument and more than a single method was used. The distribution of two-phased questionnaires, before and after the use of e-mail in memo-writing, was designed mainly to gather information about students' background as well as their perceptions and opinions with regard to the use of e-mail in memo-writing. In addition, students' texts, taken from two Conventional Memo In-Class Assessments and another two Electronic Memo In-Class Assessments as well as one Conventional Memo Final Assessment, were also used as instruments to evaluate students' scores under different conditions, before and after the use of e-mail in memo-writing, with regard to the memo format and spelling errors. Data from these two types of instruments were analysed by quantitative methods. Specific non-parametric method, the Wilcoxon matched-pairs signed-ranks test, was employed based on Biesenbach-Lucas and Weasenforth (2001) in order to determine whether the use of e-mail had any effect on the students' scores on the memo format and spelling errors.

On the other hand, one-on-one interview between the researcher and each of the subjects yielded audio texts which were later transcribed whilst the researcher's observation produced lengthy notes. Since data obtained from these two methods were qualitative in nature, the interview transcripts and the researcher's notes were analysed based on *Grounded Theory* methodology established by Strauss and Corbin (1990) which was

also employed by Frizler (1995). The painstaking exercise of reading and going through the transcripts and notes back and forth was necessary to identify the common categories (or themes) and their sub-categories (or sub-themes) which were later compared with the original categories (or themes) of inquiry that would lead the way to answering the research questions. The first two of four research questions (see p. 11) were mainly addressed by analysing quantitative data obtained from questionnaires and students' texts whilst the other two were dealt with by analysing qualitative data from the interview transcripts and researcher's notes. Further discussions pertaining to the research questions addressed as well as conclusions and recommendations are presented in the next and concluding chapter.